

# Pengaruh pemberian probiotik *Lactobacillus helveticus* Rosell-52 dan *Lactobacillus rhamnosus* Rosell-11 terhadap kadar limfosit lanjut usia

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## ABSTRACT

**Background:** Infectious disease remains a health problem for the elderly. The elderly are susceptible to infection, because the body's ability to fight infection decreases immunity. The immune status can be improved through the efforts of immunization, and nutrition. However the elderly are not sufficient to meet the nutritional needs of food, so probiotic could support nutritional adequacy.

**Objective:** Analyze the effect of probiotic *Lactobacillus helveticus* Rosell-52 and *Lactobacillus rhamnosus* Rosell-11 on levels of lymphocytes in the elderly in Tresna Elderly Social Institution Puspakarma Mataram, West Nusa Tenggara.

**Methods:** This was quasi-experimental study, randomized pre-post control group design. The population is elderly aged 60-75 years, involving 45 subjects were divided randomly into two groups, namely the treatment groups given probiotics and the control group was given a placebo. Probiotics were given for 4 weeks, with the provision of one capsule a day. Immunity status in this study was lymphocytes. Data examined included the intake of nutrients (protein, vitamin A, vitamin C, vitamin E, Fe, Zn), health status, quality of sleep, and levels of lymphocytes in the elderly. Data were analyzed using bivariate with different test Independent sample t-test, Mann-Whitney U test, Spearman, Pearson, and Paired t-test.

**Results:** Increasing number of lymphocytes were significantly in the treatment group ( $\chi \pm SD$ :  $1.84 \pm 1.85$ ) and in the control group ( $0.95 \pm 5.0$ ). There is no relationship between intake (protein, vitamin A, vitamin C, vitamin E, Fe, Zink), physical health status, and quality of sleep with levels of lymphocytes.

**Conclusion:** Probiotics in 4 weeks is proven to increase the number of lymphocytes in the elderly.

**Key words:** elderly, lymphocytes, immunonutrient intake, physical health status, quality of sleep.

## ABSTRAK

**Latar Belakang:** Penyakit menular masih menjadi masalah kesehatan bagi lansia. Lansia rentan terhadap infeksi, karena kemampuan imunitas tubuh untuk melawan infeksi menurun. Status imunitas dapat ditingkatkan melalui imunisasi dan gizi. Pada lansia, pemenuhan zat gizi dari makanan saja tidak cukup untuk memenuhi kebutuhan gizi, sehingga probiotik dapat mendukung kecukupan gizi.

**Tujuan:** Menganalisis pengaruh probiotik *Lactobacillus helveticus* Rosell-52 dan *Lactobacillus rhamnosus* Rosell-11 terhadap kadar limfosit pada lansia di Lembaga Sosial Lansia Tresna Puspakarma Mataram, Nusa Tenggara Barat.

**Metode:** Penelitian ini merupakan penelitian kuasi-eksperimental dengan pre-post test with control group. Populasi adalah lansia berusia 60-75 tahun, yang melibatkan 45 subyek dibagi secara acak menjadi dua kelompok, yaitu kelompok perlakuan yang diberikan probiotik dan kelompok kontrol diberi plasebo. Probiotik diberi selama 4 minggu, dengan pemberian satu kapsul sehari. Status kekebalan dalam penelitian ini adalah limfosit. Variabel penelitian ini asupan zat gizi (protein, vitamin A, vitamin C, vitamin E, Fe, Zn), status kesehatan, kualitas tidur, dan tingkat limfosit pada orang tua. Data dianalisis dengan menggunakan uji beda independen t-test, uji Mann-Whitney U, dan Paired t-test. Uji bivariat dengan korelasi Pearson dan rank spearman.

**Hasil:** Peningkatan jumlah limfosit bermakna pada kelompok perlakuan ( $\chi \pm SD$ :  $1.84 \pm 1.85$ ) dan pada kelompok kontrol ( $0,95 \pm 5.0$ ). Tidak ada hubungan antara asupan (protein, vitamin A, vitamin C, vitamin E, Fe, Seng), status kesehatan fisik, dan kualitas tidur dengan kadar limfosit.

**Simpulan:** Probiotik dalam 4 minggu terbukti dapat meningkatkan jumlah limfosit pada orang tua. Kata kunci: lansia, limfosit, asupan immunonutrien, status kesehatan fisik, kualitas tidur.

**Kata kunci:** lansia, limfosit, asupan immunonutrien, status kesehatan fisik, kualitas tidur.